Patent claims

1. A gas turbine having a turbine and a compressor (10) comprising a compressor housing (14),
the compressor (10) being tapped using at least one tap line (16) to remove compressed or partially compressed air and the tap line (16) having a locking device, particularly a valve (19),
the tap line (16) having a cavity (17) which lies in front of the locking device in the flow direction of the removed or removable air,
characterized in that, to thermally influence the housing (14), the cavity (17) in the housing (14) of the compressor (10) is shaped in such way that, originating from a position of an inlet (18) of the tap line (16) and a stationary blade (12) located in this area, it extends at least up into the area of a next following stationary blade (12).

2. The gas turbine as claimed in claim 1,
wherein the cavity (17) extends up into the area of a next following stationary blade (12) in the direction of the inflow of the ambient air into the compressor (10).

3. The gas turbine as claimed in one of claims 1 or 2,
wherein the cavity (17) has a locking element (20) at its entry.

4. A method for operating a gas turbine as claimed in one of claims 1 to 3,
wherein the locking device, particularly the valve (19), is closed or partially closed as the gas turbine is shut down.

5. A method for operating a gas turbine as claimed in claim 3,
wherein the cavity is sealed off using the locking element (20) during turn operation of the gas turbine.

6. A compressor (10) having a compressor housing (14) or a compressor housing (14) of such a compressor (10), which is suitable or provided for a gas turbine having a turbine and is tapped using at least one tap line (16) to remove compressed or partially compressed air,
the tap line (16) having a locking device, particularly a valve (19),
the tap line (16) having a cavity (17) which lies in front of the locking device in the flow direction of the removed or removable air,
characterized in that, to thermally influence the housing (14), the cavity (17) in the compressor housing (14) is shaped in such way that, originating from a position of an inlet (18) of the tap line (16) and a stationary blade (12) located in this area, it extends at least up into the area of a next following stationary blade (12).

7. The compressor or compressor housing as claimed in claim 6,
wherein the cavity (17) extends up into the area of a next following stationary blade (12) in the direction of the inflow of the ambient air into the compressor (10).

8. The compressor or compressor housing as claimed in one of claims 6 or 7,
wherein the cavity (17) has a locking element (20) at its entry.

US 4,213,738 also discloses a flow path for a coolant air system having a changeable gap, which the coolant air may flow through, for setting the cooling.

Adjustable cooling for gas turbines is also known from US 2,951,340 and from US 3,632,221.

Furthermore, US 5,154,578 discloses a compressor housing of an aircraft gas turbine, in which the radial supports connecting an external housing and an internal housing of the compressor may have a heating or cooling medium flow through them to set the radial gap of the rotor blades of the compressor.

In addition, US 5,605,437 discloses a device situated in the compressor housing for reducing the oscillations of the radial gap of freestanding guide blades of the compressor. The guide blade rings each have a base ring channel, i.e., situated in the compressor housing, for this purpose, which a heating medium may flow through. The ring channels are connected to one another by overflow channels, so that the heating medium may flow through the ring channels sequentially independently of the compressor operation.

The present invention comprises specifying a possibility, using which the cooling down of the compressor housing is prevented or at least delayed to reduce the danger of contact between elements cooling slower and faster, i.e., for example, the housing and the rotor.

Until now, in regard to the problem of the contact danger, it has only been suggested that the spacings between such elements, in particular the radial gaps between rotor and housing inner wall, be designed as sufficiently large.

This object is achieved as claimed in the present invention by

the features of claim 1. For this purpose, in a gas turbine having a turbine and a compressor comprising a compressor housing, the compressor being tapped to cool the turbine using at least one tap line to remove compressed or partially compressed air, the tap line has a locking device, in particular a valve. The same object is also achieved by a compressor or a compressor housing having the features of claim 6.

Furthermore, the object is achieved by a method for operating such a gas turbine having the features of claim 4, in which, as the gas turbine is shut down, the locking device, in particular the valve, is closed or partially closed.

The present invention is based on the recognition that in a gas turbine, specific elements cool off more rapidly than other